

Arkansas Space Grant Consortium
University of Arkansas at Little Rock
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PROGRAM DESCRIPTION

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Arkansas Consortium is a Capability Enhancement Consortium funded at a level of \$430,000 for fiscal year 2013.

PROGRAM GOALS

Educational Outcome 1 Goals (Metrics in parentheses)

1. Fund Research Infrastructure Grants to affiliate institutions (20).
2. Fund Student Fellowship/Scholarship Grants (32).
3. Fund STEM/MSI Scholarship/Fellowships (10)
4. Fund Workforce Development Fellowships of \$6,500 (6).
5. Fund Collaborative Research Programs (5)
6. Fund Aeronautic Enhancement Program two-year certificate student awards (6).
7. Continue to collaborate with the National Space Grant Foundation's program for longitudinal tracking of awardees, and participate fully in reporting results to NASA.

Educational Outcome 2 Goals

1. Fund Mini-Grants to K-12 educators in Arkansas (Mini 20, Outreach 5)
2. Offer applications and funding for students to be accepted to a NASA Academy, a Summer Internship at a NASA Center, Graduate Student Research Program, or summer employment positions with NASA affiliated contractors in or out of the state (as needed).

Educational Outcome 3 Goals

1. Fund Guest Lecturers from STEM disciplines to make presentations for the General Public at affiliate campuses. (1)
2. Hold the 22th Annual Symposium so students and faculty can present their research to their peers and other members of the community.
3. Maintain the ASGC website as needed.
4. Continue active involvement with University Affairs Offices at all the NASA centers.

PROGRAM/PROJECT BENEFIT TO OUTCOME (1,2, & 3)

Outcome 1:

- In the summer of 2012, Arkansas participated in the Southeast Regional Student Hardware Workshop at Huntsville, Alabama. Dr. Julian Post from University of Arkansas at Little Rock and student Brian Plank from John Brown University attended this weekend workshop. Mr. Plank returned to his campus and has formed the Eaglenaut Aerospace Club. Within a year, there are 23 members and are ready for their first balloon launch this spring.

Outcome 2:

- A two day summer science camp was held for underprivileged 3rd -7th grade students in conjunction with the Faulkner County, Arkansas Boys and Girls Club. One hundred students participated in one of the four sessions. A large majority of these students are on free lunch programs.
- Dr. Basil Miller at Henderson State University is providing professional development workshops in physics and astronomy reaching to the entire southwest region of the state.
- The Central Arkansas Astronomical Society provides evening educational session open to the general public. They also offer private session for the Arkansas Home-School Community.

Outcome 3:

- The 22nd ASGC Symposium will be held at the Hot Springs Convention Center on April 7th, 2014. All year 23 awardees are to present their research. ASGC expects approximately 49 presentations. Retired Astronaut Duane "Digger" Carey will be our guest lecturer. Digger joined NASA's Astronaut Coro in 1996 and piloted the Space Shuttle Columbia on mission STS-109, a servicing mission to the Hubble Space Telescope. While in Arkansas, Digger will speak to Civil Air Patrol cadets at the Arkansas Wing Conference, where he will also give the key note address.

PROGRAM ACCOMPLISHMENTS

Outcome 1:

With our FY13 base funding ASGC was able to exceed our goals in most of our Outcome 1 areas. ASGC funded **45** Research Infrastructure awards, **76** Student Fellowships/Scholarship and **6** Workforce Development Scholarships. Five Collaborative Research

Projects were funded, in which **11** faculty, **1** graduate student and **5** undergraduate students were funded. Our goals for these programs were 27, 39 and 6 respectively.

ASGC funded **7** Aeronautic Enhancement Program two-year certificate student awards this year. Though funding was only available for six, the Arkansas Aerospace Training Consortium (AATC) added another campus to their membership. ASGC was able to fund the additional scholarship with the use of state matching funds. Partnering with the AATC, ASGC has been able to provide scholarships to the most qualified students in this program.

The STEM/MSI program implemented a few years ago has continued to be beneficial to our program. This year there were **24** awards made, up from last year's 21 total awards. Arkansas strives to increase our participation of underrepresented minority groups and female participation outreach.

In FY10 ASGC added John Brown University (JBU) as a non-voting member to our affiliation. JBU was the only traditional 4-year college/university (with full STEM programs) in Arkansas that was not a fully funded, voting member. Due to our base budget reallocation the ASGC program office was able to fully fund them and make them a voting member this year.

Collaboration with the National Space Grant Foundation's program for longitudinal tracking of awardees has proven to be a great investment. The ASGC program office receives monthly reports from past awardees on their current standing in education or employment.

Outcome 2:

The Program Office is in the process of restructuring our K-12 Outreach program. Dr. Julian Post was hired as Assistant Director and charged to lead our Outreach program. With the help of Ms. Schyler Cannatella, Education and Outreach Coordinator, our K-12 program will offer a lending library, professional development workshops, and project base learning awards.

This year, only 2 outreach awards and 2 mini grants have been funded. Though only a few awards have been funded, a great deal of impact has been achieved. One award to Dr. Basil Miller at Henderson State University is providing professional development workshops in physics and astronomy reaching the entire southwest region of the state. Our second outreach award is with the Central Arkansas Astronomical Society, providing evening educational sessions open to the general public. They also offer private sessions for the Arkansas Home-School Community.

Outcome 3:

The 22nd ASGC Symposium will be held at the Hot Springs Convention Center on April 7th, 2014. Retired Astronaut Duane "Digger" Carey will be our guest lecturer. Lt. Col. Carey received a Bachelor of Science degree in Aerospace Engineering and Mechanics and a Master of Science degree in Aerospace Engineering from the University of Minnesota. Digger joined NASA's Astronaut Corps in 1996. In 2002, he piloted the

Space Shuttle Columbia on mission STS-109, a servicing mission to the Hubble Space Telescope. While in Arkansas, Digger will also talk to the Civil Air Patrol cadets at the Arkansas Wing Conference.

ASGC updates the program website as needed. A computer specialist in the Graduate Institute of Technology at the University of Arkansas at Little Rock provides this service. We are also started working on a redesign on our website to make it more user friendly.

PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE MEASURES

- **Student Data and Longitudinal Tracking:** Total awards= 76;
Fellowship/Scholarship= 53, Higher Education/Research Infrastructure= 23; 24 of the total awards are underrepresented minority F/S funding, while 40 were female participation; During the FY13 program year 23 students are pursuing advanced degrees in STEM disciplines, 2 are seeking STEM positions, 4 accepted STEM positions at NASA contractors, 6 accepted STEM positions in industry, 1 accepted a STEM position in K-12 teaching, 3 accepted STEM positions in academia, and 2 went on to positions in non-STEM disciplines. The remaining students have not yet received the degree that they were pursuing when they received their Space Grant award.
- **Minority-Serving Institution Collaborations:** Arkansas has only one HBCU, the University of Arkansas at Pine Bluff. UABP has become more competitive over the past few years in NASA related research, thus involving more underserved minority students. Currently, Dr. Mansour Mortizavi from UAPB, is working on a Collaborative Research Project with Dr. Greg Salamo from UA, Fayetteville.
- **NASA Education Priorities:**
 - Diversity of institutions, faculty, and student participants (gender, underrepresented, underserved). The Arkansas Space Grant Consortium is working to becoming a more diverse group. Two years ago ASGC reported only 1 female faculty researcher. This year there are six faculty researchers. Our underrepresented minority student (31) and female student (39) participation is well above our state standard at 40.7% and 51.3% respectively. Our jurisdictional goals are 25% minority participation and 40% female participation.
 - Community Colleges – ASGC funds the Aeronautic Enhancement Program for two-year A&P certificate students. Through partnering with the Arkansas Aerospace Training Consortium, ASGC has been able to provide scholarships to the most qualified students in the seven campuses of AATC.

IMPROVEMENTS MADE IN THE PAST YEAR

ASGC has made several changes this year. First, the decision was made to revitalize the K-12 program. Although this program does not have a large budget, we discovered it does have a significant impact on the state. Many of our K-12 schools have a high population of underserved minority especially in the Delta region. This program has been instrumental in increasing STEM knowledge to those areas. The Program Office recently hired Ms. Schyler Cannatella as Education and Outreach Coordinator. She has played a crucial role in the restructuring of our K-12 program.

In working with our Space Grant Regional contacts, JBU student, Brain Plank attended the Student Hardware Club Workshop at Huntsville, Alabama. He immediately returned home to start this type of program on his campus. Currently there are 23 members and they are ready for their first Balloon launch. They are also collaborating with our University Ballooning Program leader Dr. Tillman Kennon at Arkansas State University.

Our Program Office has been working with the lead institution on ways to better streamline our award process. After several meeting with our affiliates and our lead institution we now have a process that fulfils our responsibility to our lead campus and is beneficial to all our affiliates. The camaraderie of our affiliates is what makes this program a success. The Program Office values the input from every member.

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

ASGC consist of 17 colleges and universities. A campus representative from each campus sits on our board and has a vote on all proposals funded through ASGC. To aid in this process, several state agency, non-profit organizations, and industry are allowed a voice in the voting processes. The Arkansas Aerospace Training Consortium aids ASGC in awarding the Aerospace Enhancement funds. Arkansas Science and Technology Authority provide state matching funds, and then paired with Arkansas Economic Development Commission; ASGC is able to keep our NASA project in line with state's R&D priorities.

Four-Year Higher Education Institutions (Affiliates) – Voting members

Arkansas State University - Jonesboro†
Arkansas Tech University - Russellville
Harding University – Searcy*
Henderson State University - Arkadelphia
Hendrix College – Conway*
John Brown University*
Lyon College – Batesville*
Ouachita Baptist University – Arkadelphia*
Southern Arkansas University - Magnolia
University of Arkansas, Fayetteville†
University of Arkansas at Ft. Smith
University of Arkansas at Little Rock†

University of Arkansas for Medical Sciences – Little Rock†

University of Arkansas at Monticello

University of Arkansas at Pine Bluff ‡

University of Central Arkansas - Conway

University of the Ozarks – Clarksville*

Partners in Aerospace - Non-voting members

Arkansas Department of Aeronautics – updates on aeronautics development in Arkansas

Arkansas Aviation Historical Society –input on aviation and aerospace programs

Arkansas Department of Education – input and K-12 standards

Arkansas Department of Higher Education – input and higher education standards

Arkansas Science and Technology Authority – cash matching, state Science & Technology standards, State Research and Development Plan and Strategic Plan

Arkansas Aerospace Training Consortium – 2-year college collaboration

BEI Systems & Space Division – industry contact and input

Civil Air Patrol–Arkansas Wing–aerospace education, teacher/flight program cooperation

Conestoga – Rovers & Associates – industry contact and input

*Private Institutions

†Research/PhD Granting Institutions

‡HBCU

The National Space Grant Office requires two annual reports, the Annual Performance Data Report (APD) and the Office of Education Performance Measurement System (OEPM) report. The former is primarily narrative and the latter data intensive. Because the reporting timeline cycles are different, data in the two reports may not necessarily agree at the time of report submission. OEPM data are used for official reporting.